

## AMENDMENTS TO THE CLAIMS

Claims 1-25 (Canceled).

26. (New) An ignition system for a smoking machine, comprising:  
a heat source that is adapted to emit heat in order to ignite one end of a smoking article which is held by a smoking machine;  
an automatic sensor which is adapted to detect the position of said end of the smoking article; and  
a control unit in communication with said sensor, which is adapted to adjust automatically a parameter of the operation of said heat source depending on the position of said end as detected by said sensor, such as to enable successful ignition of said end by said heat source.
27. (New) An ignition system as claimed in claim 26, wherein said heat source is adapted to emit heat by air convection in order to ignite said end of the smoking article, and said control unit is adapted to adjust automatically the temperature of the heat source, the adjustment depending upon the location of said end, as detected by the sensor.
28. (New) An ignition system as claimed in claim 26, wherein said control unit is adapted to adjust channelling of heat from said heat source to said end of the smoking article.
29. (New) An ignition system as claimed in claim 28, wherein said channeling comprises one of dispersing heat away from the end of the smoking article and directing heat towards the smoking article, as required.
30. (New) An ignition system as claimed in claim 26, wherein said heat source is adapted to emit heat in order to ignite said end of the smoking article by electromagnetic radiation, and said control unit is adapted to adjust automatically the level of electromagnetic radiation that is applied by the heat source to the end of the smoking article for igniting the article, the adjustment depending upon the position of said end as detected by the sensor.

31. (New) An ignition system as claimed in claim 30, wherein said control unit is adapted to adjust automatically the level of electromagnetic radiation that is emitted from the heat source.

32. (New) An ignition system as claimed in claim 30, wherein said control unit is adapted to adjust the level of electromagnetic radiation that is transmitted from the heat source to the end of the smoking article.

33. (New) An ignition system as claimed in claim 30, wherein said system includes an adjustable shield which can be positioned and adjusted in order to shield a selected area of the heat source from the end of the smoking article.

34. (New) An ignition system as claimed in claim 30, wherein said system includes an adjustable reflector or refractor which is adapted to selectively focus or direct radiation emitted from the heat source towards said end of the smoking article.

35. (New) An ignition system as claimed in claim 26, wherein said heat source is adapted to emit heat in order to ignite said end of the smoking article by electromagnetic radiation, and said control unit is adapted to adjust automatically the wavelength range of electromagnetic radiation that is applied by the heat source to the end of the smoking article for igniting the article, the adjustment depending upon the position of said end as detected by the sensor.

36. (New) An ignition system as claimed in claim 35, wherein said control unit is adapted to adjust automatically the wavelength range of electromagnetic radiation that is emitted from the heat source.

37. (New) An ignition system as claimed in claim 35, wherein said system comprises at least one thermal filter, which thermal filter is adapted to absorb or reflect a proportion of radiation impinging on the filter, which thermal filter is arranged to be removably positioned between said heat source and the end of the smoking article such as to prevent the transmission of a proportion of radiation emitted from said heat source towards said smoking article.

38. (New) An ignition system as claimed in claim 35, wherein said system comprises at least one filter, each filter including a plurality of discrete areas with different absorption/reflection characteristics, such that by positioning the filter between the heat source and the end of the smoking article and moving the filter relative to the heat source and the smoking article, the quantity of electromagnetic radiation transmitted from the heat source to the smoking article may be adjusted as required.

39. (New) An ignition system as claimed in claim 26, wherein said control unit is adapted to automatically adjust the time for which heat is applied to the end of the smoking article for igniting the article, depending upon the location of said end.

40. (New) An ignition system as claimed in claim 26, wherein said control unit is adapted to automatically adjust the timing of the application of heat with respect to the puff cycle of a smoking machine, depending upon the position of said end of the smoking article as detected by the sensor.

41. (New) An ignition system as claimed in claim 26, wherein said control unit is further adapted to automatically adjust relative movement of said heat source and said smoking article, such that a predetermined distance separates said heat source from said end of the smoking article, whereby said end of the smoking article can be successfully ignited by the heat source.

42. (New) An ignition system as claimed in claim 26, said end of the smoking article can be selectively shielded from said heat source, such as to prevent substantial transfer of heat from said heat source to said end.

43. (New) An ignition system according to claim 26, wherein the sensor is arranged to detect radiation reflected from or emitted by the smoking article.

44. (New) An ignition system for a smoking machine, comprising:  
a heat source that is adapted to emit heat for igniting one end of a smoking article which is held by a smoking machine;

an automatic sensor which is adapted to detect the position of said end of the smoking article; and

a control unit in communication with said sensor, which is adapted to adjust automatically at least one of a parameter of the operation of said heat source, and relative movement of said heat source and of said article, depending on the position of said end as detected by said sensor, such as to enable successful ignition of said end by said heat source;

wherein the sensor is arranged to detect radiation reflected from or emitted by the smoking article.

45. (New) An ignition system according to claim 44, wherein said sensor comprises a range finding sensor which is adapted to transmit signals which are able to be reflected from a target, to detect signals reflected from said target, and to analyse said reflected signals.

46. (New) An ignition system according to claim 44, wherein said sensor comprises a camera type device which is capable of visualising the smoking article.

47. (New) A smoking machine comprising a holder which holds a smoking article such as to expose one end thereof, a puffing unit which draws air through the smoking article, and an ignition system, the ignition system comprising:

a heat source that is adapted to emit heat in order to ignite one end of a smoking article which is held by a smoking machine;

an automatic sensor which is adapted to detect the position of said end of the smoking article; and

a control unit in communication with said sensor, which is adapted to adjust automatically a parameter of the operation of said heat source depending on the position of said end as detected by said sensor, such as to enable successful ignition of said end by said heat source.

48. (New) A smoking machine as claimed in claim 47, which machine is arranged to hold a plurality of smoking articles, and said lighting system is adapted to ignite each of said smoking articles consecutively.

49. (New) A smoking machine as claimed in claim 47, which machine is adapted to move each smoking article which is to be ignited to a position such that the end of the smoking article is within a small distance of said ignition head prior to detection of said end by the sensor and consequent adjustment of a parameter of the operation of said heat source.